

ABSTRACT OF THE DISCLOSURE

1 A method and apparatus for preventing thermo-mechanical damage to
2 an electrostatic discharge (ESD) protection device is disclosed. The method
3 and apparatus of the invention focus on preventing ESD protection circuit
4 failure due to elastic waves within the materials of an integrated circuit. The
5 elastic waves are specifically caused by very fast ESD discharge events.
6 Disclosed are ESD protection circuits incorporating materials with superior
7 thermo-mechanical properties, in particular, material damping, melting
8 temperature, material stiffness, elastic modulus, tensile strength and fracture
9 toughness. Also disclosed is the use of thermo-mechanical energy absorber
10 material that is designed to protect ESD devices from failure due to slower
11 ESD events.